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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,491	09/12/2003	Jia-Shyong Cheng	TOP 324	6351

7590

08/09/2005

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EXAMINER
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PARKER, KENNETH

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

10/660,491

Applicant(s)

CHENG ET AL.

Examiner

Kenneth A. Parker

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-10,12,13,15,25-30 and 32-34 is/are rejected.
- 7) ☒ Claim(s) 3,14,16-21,23 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

**Claims 1, 4, 5, 11-13, 15, 25-26, 32- 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakata et al 6429916.**

Nakata discloses a liquid crystal with a passivation layer 8, color filter 13, (indicated as a photoresist col, 3-4, which are organic), and overcoat layer 14 (acrylic photoresist, column 4, lines 5-18), also organic.

The references shows in relation to claim 1. A liquid crystal display with an integrated color filter, comprising: an active matrix substrate with a plurality of switching elements (see cover figure); an insulating layer formed on the active matrix substrate 8; a double-organic layer formed on the insulating layer (13-14); a plurality of pixel electrodes 9 formed on the double-organic layer, and electrically connected to the respective switching elements via a plurality of respective contact holes; a substrate positioned a predetermined distance above the active matrix substrate (inherent to a conventional liquid crystal display element of column 1 and required for operation); and a liquid crystal layer between the two substrates (inherent to a conventional liquid crystal display element of column 1 and required for operation). The color filters include embodiments specifically listed as 1.2 um (column 4, lines 50-61), which is viewed as substantially 1 um. The reason why the claim is so limited is not discussed in the reference, however the function described is met by a structure meeting the claimed structure. Further the language employed appears to be more of a method limitation as it describes the reasoning employed by the designer, which cannot be discerned by the

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final product and therefore does not patentably distinguish over the reference. See MPEP

In relation to claim 2, the double-organic layer comprises a plurality of color-filter units and a transparent organic layer. In relation to claim 4, the transparent organic layer is formed above the color-filter units layer. In relation to claim 5, the transparent organic layer is formed of polycarbonate or acrylic-resin. In relation to claim 12, the pixel electrodes are made of indium tin oxide. In relation to claim 13, the contact holes pass through the insulating layer and the double-organic layer.

The references shows in relation to claim 15. An integrated color filter, comprising: a substrate; a plurality of switching elements formed on the substrate in a matrix arrangement; an insulating layer 8 formed on the switching elements; a plurality of color-filter units 9 formed above the insulating layer; a transparent organic layer 14 formed above the color-filter units; and a plurality of pixel electrodes 9 formed above the color-filter units, and electrically connected to the respective switching elements via a plurality of respective contact holes 11, wherein the contact holes pass through the transparent organic layer, color-filter units and the insulating layer.

The references shows in relation to claim 25. A method of fabricating an integrated color filter, comprising: providing a substrate; forming a plurality of switching elements on the substrate in a matrix arrangement; forming an insulating layer on the switching elements; forming a plurality of color-filter units with a first hole on the insulating layer; forming a transparent organic layer on the color-filter units, having a second hole to expose the first hole; etching the insulating layer by using the

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transparent organic layer as a mask, forming a third hole in the insulating layer to expose a part of the surface of the switching elements, wherein the third hole forms a contact hole together with the first and the second holes; and forming a plurality of pixel electrodes on the transparent organic layer, wherein the pixel electrodes are electrically connected with the switching elements via the contact hole.

In relation to claim 26, the transparent organic layer is made of polycarbonate or acrylic-resin. In relation to claim 33, the pixel electrodes are made of indium tin oxide.

In relation to 11 and 32, red, blue and green are disclosed in column 3.

### ***Claim Rejections - 35 USC § 103***

**Claims 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by or in the alternative under 35 U.S.C. 103(a) as being unpatentable over Nakata et al 6429916.**

In relation to claims 33-34, the limitation of 1.2 um is explicitly stated, which is viewed as meeting the limitation of less than about 1-1.2, as it differs from the range by an infinitely small amount so it touches the claimed range and is therefore considered to be an anticipation. However, for the sake of argument, it can be construed as non patentably distinct as the value of 1.2 is so narrower than and infinitely close to "about 1 -1.2, and as such would not patentably distinguish over the reference. Further, there would have been a motivation to make it thinner as such was a well established goal in the art and as it used less material. Therefore, the claims are anticipated, or, obvious

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over the reference as one of ordinary skill would have found reason, motivation or suggestion to make the layer thinner a little thinner as discussed above.

See MPEP § 2144.05 and MPEP 2131.02. PRIOR ART WHICH TEACHES A RANGE WITHIN, OVERLAPPING, OR TOUCHING THE CLAIMED RANGE ANTICIPATES IF THE PRIOR ART RANGE DISCLOSES THE CLAIMED RANGE WITH "SUFFICIENT SPECIFICITY" When the prior art discloses a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious. The question of "sufficient specificity" is similar to that of "clearly envisaging" a species from a generic teaching. See MPEP § 2131.02. A 35 U.S.C. 102 /103 combination rejection is permitted if it is unclear if the reference teaches the range with "sufficient specificity." The examiner must, in this case, provide reasons for anticipation as well as a motivational statement regarding obviousness. Ex parte Lee>,< 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board). For a discussion of the obviousness of ranges see MPEP § 2144.05. OVERLAP OF RANGES In the case

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where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (The prior art taught carbon monoxide concentrations of "about 1-5%" while the claim was limited to "more than 5%." The court held that "about 1-5%" allowed for concentrations slightly above 5% thus the ranges overlapped.); In re Geisler, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997) (Claim reciting thickness of a protective layer as falling within a range of "50 to 100 Angstroms" considered prima facie obvious in view of prior art reference teaching that "for suitable protection, the thickness of the protective layer should be not less than about 10 nm [i.e., 100 Angstroms]." The court stated that "by stating that suitable protection' is provided if the protective layer is about' 100 Angstroms thick, [the prior art reference] directly teaches the use of a thickness within [applicant's] claimed range."). Similarly, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.). >[ A ] prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness." In re Peterson, 315 F.3d

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1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003). However, if the reference's disclosed range is so broad as to encompass a very large number of possible distinct compositions, this might present a situation analogous to the obviousness of a species when the prior art broadly discloses a genus. *Id.* See also *In re Baird*, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); MPEP § 2144.08.

**Claims 6-9, 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata et al 6429916 in view of Gu et al 6011274 and 5955744.**

Lacking from the disclosure in relation to claim 6. The liquid crystal display with an integrated color filter as claimed in claim 2, wherein the light transmission of the transparent organic layer is above 90%. Lacking from the disclosure in relation to claim 7. The liquid crystal display with an integrated color filter as claimed in claim 2, wherein the dielectric constant of the transparent organic layer is 2.6-3.6. Low dielectric (below 3) was well known for minimizing coupling between the pixel electrode and the driving lines (which minimizes crosstalk). Therefore it would have been obvious to one of ordinary skill to employ a dielectric below 3 for the benefit of minimizing coupling.

Lacking from the disclosure in relation to claim 8. The liquid crystal display with an integrated color filter as claimed in claim 2, wherein the thickness of the transparent organic layer is 1.5-3.5  $\mu\text{m}$ . Lacking from the disclosure in relation to claim 9. The liquid crystal display with an integrated color filter as claimed in claim 2, wherein the dielectric constant of the color-filter units is 3.5-5.0. Lacking from the disclosure in



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relation to claim 10. The liquid crystal display with an integrated color filter as claimed in claim 2, wherein the thickness of the color-filter units is 1.0-2.0  $\mu\text{m}$ . Lacking from the disclosure in relation to claim 27. The method of fabricating an integrated color filter as claimed in claim 25, wherein the light transmission of the transparent organic layer is above 90%. Lacking from the disclosure in relation to claim 28. The method of fabricating an integrated color filter as claimed in claim 25, wherein the dielectric constant of the transparent organic layer is 2.6-3.6. Lacking from the disclosure in relation to claim 29. The method of fabricating an integrated color filter as claimed in claim 25, wherein the thickness of the transparent organic layer is 1.5-3.5  $\mu\text{m}$ . Lacking from the disclosure in relation to claim 30. The method of fabricating an integrated color filter as claimed in claim 25, wherein the dielectric constant of the color-filter units is 3.5-5.0. Lacking from the disclosure in relation to claim 31. The method of fabricating an integrated color filter as claimed in claim 25, wherein the thickness of the color-filter units is 1.0-2.0  $\mu\text{m}$ .

Gu teaches that high transmissivity is better for high brightness and that acrylic was suitable for that reason. Therefore it would have been obvious to employ high transparency and acrylic to one of ordinary skill. Red, green and blue were well known to employ to enable full color display, which would have been obvious to one of ordinary skill for that reason. Gu teaches that low dielectric such as below 3 was preferred for low crosstalk and coupling. Therefore it would have been obvious to one of ordinary skill employ the layers with below 3 dielectric constant for low crosstalk and coupling. Thickness as claimed were conventional as evidenced by Gu and were further result

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effective variables between the well known desire to be as thin as possible and the well known need to be thick enough for there required function. As the selection of a result effective variable was considered obvious to one of ordinary skill, selection of this variable would not patentably distinguish over the reference.

### ***Allowable Subject Matter***

**Claims 3, 14, 16-21, 23-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

The following is a statement of reasons for the indication of allowable subject matter: The claims are indicated as allowable as they were directed to the embodiment with the color filter on top, for which no reference was found over which the claimed thickness would have been obvious.

### ***Response to Arguments***

Applicant's arguments filed have been fully considered but they are not persuasive. The disclosure of 1.2 is infinitely close to less than 1.2, and as such is viewed as not patentably distinct.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A. Parker whose telephone number is 571-272-2298. The examiner can normally be reached on M-F 10:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth A Parker  
Primary Examiner  
Art Unit 2871